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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SAMS, MATTHEW C

ART UNIT	PAPER NUMBER
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2617

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/743,243	KAMPEN ET AL.	
	Examiner	Art Unit	
	Matthew C. Sams	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 11-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-5 and 11-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action has been changed in response to the amendment filed on 9/19/2006.
2. The declaration under 27 CFR 1.131 has been accepted. The rejection under 35 U.S.C. 103(a) has been withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-5 & 11-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindskog et al. (US 2002/0132603 hereinafter, Lindskog) in view of Zhong et al. (US 2006/0193296 hereinafter, Zhong).

Regarding claim 1, Lindskog teaches WLAN system with stations that operate in awake and doze states comprising a station in the awake state and an access point (AP) of the system informed that the station is in the awake state, transmitting to the AP a closing frame, wherein a designated bit in the closing frame informs the AP that the station will transition to the doze state (Page 2 [0024-0025] & Page 3 [0050-0055]), where:

(A) comprises starting a timer and transmitting the closing frame after the timer reaches a threshold value (Page 4 [0071-0072] and Fig. 2)

(B) transitioning the station from the awake state to the doze state based on the transmission of the closing frame. (Fig. 2 [active & sleep] and Page 3 [0050-0055])

Lindskog differs from the claimed invention by not explicitly reciting the designated bit is a more data bit of an IEEE 802.11 standard.

In an analogous art, Zhong teaches transitioning the station from the awake state to the doze state based on the transmission of the closing frame, wherein said designated bit is a more data bit of an IEEE 802.11 standard. (Page 2 [0023, 0024 & 0040] and Page 3 [0041 & 0044]) At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the method of power saving of Lindskog after modifying it to incorporate the more data bit of Zhong. One of ordinary skill in the art would have been motivated to do this since using the more data bit enables the mobile station to recognize that there is at least one more frame of data to be sent after the mobile station thought it would be able to enter a sleep mode. (Page 2 [0023-0024])

Regarding claim 2, Lindskog in view of Zhong teaches the contention-based WLAN system conforms to an IEEE 802.11 standard. (Lindskog Page 1 [0002 & 0007] & Page 3 [0051])

Regarding claim 3, Lindskog in view of Zhong teaches the contention-based WLAN system conforms to an extension of the IEEE 802.11 standard. (Lindskog Page 1 [0002 & 0007] & Page 3 [0051])

Regarding claim 4, Lindskog in view of Zhong teaches steps A & B are performed independent of any beacon schedule for the system. (Lindskog Page 1 [0015] & Page 4 [0071-0083])

Regarding claim 5, Lindskog in view of Zhong teaches receiving from the AP an acknowledgment frame corresponding to the closing frame. (Lindskog Fig. 2 [Sleep Res])

Regarding claim 11, Lindskog in view of Zhong teaches the closing frame is a data frame and step A comprises receiving from the AP an acknowledgment frame corresponding to the closing frame. (Lindskog Page 3 [0050-0055], Zhong Page 2 [0023, 0024 & 0040] and Page 3 [0041 & 0044])

Regarding claim 12, Lindskog in view of Zhong teaches that step A comprises receiving a first data frame from the AP, wherein a designated bit in the first data frame informs the station whether the AP has further data to transmit to the station. (Zhong Page 2 [0023, 0024 & 0040] and Page 3 [0041 & 0044])

Regarding claim 13, Lindskog in view of Zhong teaches the designated bit in the first data frame informs the station that the AP has further data (Zhong Page 2 [0023]), the station transmits an acknowledgment frame corresponding to the first data frame, wherein a designated bit in the acknowledgment frame informs the AP that the station will remain in the awake state and be available to receive at least one further transmission from the AP. (Lindskog Page 3 [0055] e.g. the NIC may refuse a transition to enter D1, D2 or D3)

Regarding claim 14, Lindskog in view of Zhong teaches receiving a second data frame from the AP, wherein the designated bit in the second data frame informs the station whether the AP has further data to transmit to the station. (Zhong Page 3 [0044])

Regarding claim 15, Lindskog in view of Zhong teaches the designated bit in the first data frame informs the station that the AP has further data, the station transmits the closing frame. (Lindskog Page 1 [0015] e.g. asynchronous, Page 4 [0080] and Zhong Page 4 [0052-0056])

Regarding claim 16, Lindskog in view of Zhong teaches with the station in the doze state, transitioning the station from the doze state to the awake state and transmitting to the AP a first frame, wherein a designated bit in the first frame informs the AP that the station will remain in the awake state and be available to receive at least one transmission from the AP. (Lindskog Page 3 [0055] and Zhong Page 2 [0017])

Regarding claim 17, Lindskog in view of Zhong teaches an AP of a contention-based WLAN system in which a station is adapted to operate in awake and doze states comprising

(A) with the station in the awake state and the AP informed that the station is in the awake state, receiving from the station a closing frame, wherein a designated bit in the closing frame informs the AP that the station will transition to the doze state based on the transmission of the closing frame to the AP, wherein the closing frame is transmitted by the station in response to a timer reaching a threshold value (Lindskog Page 4 [0071-0072], Fig. 2 [active & sleep] and Page 3 [0050-0055]) and;

(B) refraining from transmitting frames to the station until a notification is received that the station is in the awake state. (Zhong Page 1 [0011])

Regarding claim 18, Lindskog in view of Zhong teaches the contention-based WLAN system conforms to an IEEE 802.11 standard. (Lindskog Page 1 [0002 & 0007] & Page 3 [0051])

Regarding claim 19, Lindskog in view of Zhong teaches the contention-based WLAN system conforms to an extension of the IEEE 802.11 standard. (Lindskog Page 1 [0002 & 0007] & Page 3 [0051])

Regarding claim 20, Lindskog in view of Zhong teaches steps A & B are performed independent of any beacon schedule for the system. (Lindskog Page 1 [0015] & Page 4 [0071-0083])

Regarding claim 21, Lindskog in view of Zhong teaches the closing frame is a data frame and step A comprises receiving from the AP an acknowledgment frame corresponding to the closing frame. (Lindskog Page 3 [0050-0055])

Regarding claim 22, the limitations of claim 22 are rejected as being the same reason set forth above in claim 12.

Regarding claim 23, the limitations of claim 23 are rejected as being the same reason set forth above in claim 13.

Regarding claim 24, the limitations of claim 24 are rejected as being the same reason set forth above in claim 14.

Regarding claim 25, the limitations of claim 25 are rejected as being the same reason set forth above in claim 15.

Regarding claim 26, the limitations of claim 26 are rejected as being the same reason set forth above in claim 1.

Regarding claim 27, the limitations of claim 27 are rejected as being the same reason set forth above in claim 1.

Regarding claim 28, the limitations of claim 28 are rejected as being the same reason set forth above in claim 17.

Regarding claim 29, the limitations of claim 29 are rejected as being the same reason set forth above in claim 17.

Regarding claim 30, Linskog in view of Zhong teaches a station of a contention based WLAN system in which the station is adapted to operate in awake and doze states comprising,

(A) with the station in the awake state and an AP of the system informed that the station is in the awake state, transmitting to the AP a closing frame, wherein a designated bit in the closing frame informs the AP that the station will transition to the doze state (Linskog Page 2 [0024-0025] & Page 3 [0050-0055]) and

(B) transitioning the station from the awake state to the doze state, wherein step (A) comprises:

receiving a first data frame from the AP, wherein a designated bit in the first data frame informs the station whether the AP has further data to transmit to the station (Zhong Page 3 [0044]), wherein, when the designated bit in the first data frame informs the station that the AP has further data, the station transmits an

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acknowledgment frame corresponding to the first data frame, wherein a designated bit in the acknowledgment frame informs the AP that the station will remain in the awake state and be available to receive at least on further transmission from the AP (Lindskog Page 3 [0050-0055]) and

receiving a second data frame from the AP, wherein a designated bit in the second data frame informs the station whether the AP has further data to transmit to the station. (Zhong Page 4 [0051-0056])

Regarding claim 31, Lindskog in view of Zhong teaches a method in which a station is adapted to operating in awake and doze states in a WLAN system comprising

(A) with the station in the awake state and an AP of the system informed that the station is in the awake state, transmitting to the AP a closing frame, wherein a designated bit in the closing frame informs the AP that the station will transition to the doze state (Lindskog Page 2 [0024-0025] & Page 3 [0050-0055]) and

(B) transitioning the station from the awake state to the doze state, wherein step (A) comprises receiving a first data frame from the AP, wherein a designated bit in the first data frame informs the station whether the AP has further data to transmit to the station and, when the designated bit in the first data frame informs the station that the AP has further data, the station transmits the closing frame. (Lindskog Page 1 [0015] e.g. asynchronous, Page 4 [0080] and Zhong Page 2 [0023, 0024 & 0040] and Page 3 [0041 & 0044])

Regarding claim 32, Lindskog in view of Zhong teaches a method in which a station is adapted to operating in awake and doze states in a WLAN system comprising:

(A) with the station in the awake state and an AP of the system informed that the station is in the awake state, receiving at the AP a closing frame, wherein a designated bit in the closing frame informs the AP that the station will transition to the doze state (Lindskog Page 2 [0024-0025] & Page 3 [0050-0055]) and

(B) refraining from transmitting frames to the station until a notification is received that the station is in the awake state (Zhong Page 1 [0011]), wherein step (A) comprises:

transmitting a first data frame to the station, wherein a designated bit in the first data frame informs the station whether the AP has further data to transmit to the station (Zhong Page 2 [0023, 0024 & 0040] and Page 3 [0041 & 0044]), wherein, when the designated bit in the first data frame informs the station that the AP has further data, the station transmits an acknowledgment frame corresponding to the first data frame, wherein a designated bit in the acknowledgment frame informs the AP that the station will remain in the awake state and be available to receive at least on further transmission from the AP (Lindskog Page 3 [0055] and Zhong Page 2 [0023, 0024 & 0040] and Page 3 [0041 & 0044]) and

transmitting a second data frame to the station, wherein a designated bit in the second data frame informs the station whether the AP has further data to transmit to the station. (Zhong Page 4 [0051-0056])

Regarding claim 33, Lindskog in view of Zhong teaches a method in which a station is adapted to operating in awake and doze states in a WLAN system comprising

(A) with the station in the awake state and an AP of the system informed that the station is in the awake state, receiving from the station a closing frame, wherein a designated bit in the closing frame informs the AP that the station will transition to the doze state (Lindskog Page 2 [0024-0025] & Page 3 [0050-0055]) and

(B) refraining from transmitting frames to the station until a notification is received that the station is in the awake state (Zhong Page 1 [0011]), wherein step (A) comprises:

transmitting a first data frame to the station, wherein a designated bit in the first data frame informs the station whether the AP has further data to transmit to the station (Zhong Page 2 [0023, 0024 & 0040] and Page 3 [0041 & 0044]) and, when the designated bit in the first data frame informs the station that the AP has further data, the station transmits the closing frame. (Lindskog Page 1 [0015] e.g. asynchronous, Page 4 [0080] and Zhong Page 2 [0023, 0024 & 0040] and Page 3 [0041 & 0044])

Response to Arguments

5. Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Sams whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 7:30-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571)272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MCS

11/2/2006



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